

# 70050

## BSLSS Residue

2223 grams

### Introduction

BSLSS residue – many fragments off of several rock (Butler 1973). This sample would be expected to contain chips off of the loose rock samples and well as soil that was adhering to them when they were collected. This sample has been sieved.

### Petrography

For some incomprehensive reasons, this sample is better characterized by rare gas analysis than by any other petrography (Bogard et al. 1974).

70053, was a “picking pot” for coarse fines (who?).

There were 57 grams of 4 – 10 mm coarse-fines in this bag (Meyer 1973).

The BSLSS (EVA #3) contained large loose rocks 70017, 70215, 76055, 77035 and 79035. It also contained the core tube 70012 and two bags of documented samples (70075 and 76335).

### Chemistry

Rhodes et al. (1974) reported an analysis which was intermediate between highland and mare (figure 1).

### Other Studies

This sample was used for physical measurements (Talwani et al. 1974).

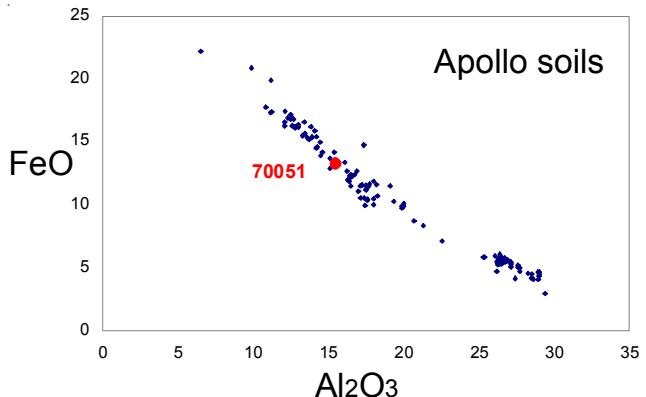


Figure 1: Composition of 70051 compared with other Apollo soil samples.

### References for 70051

Bogard D.D., Hirsch W.C. and Nyquist L.E. (1974) Noble gases in Apollo 17 fines: Mass fractionation effects in trapped Xe and Kr. *Proc. 5<sup>th</sup> Lunar Sci. Conf.* 1975-2003.

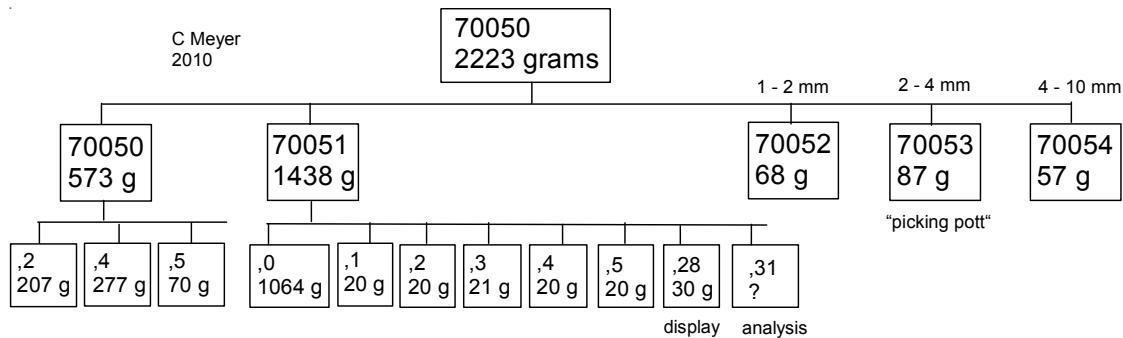
Butler P. (1973) Lunar Sample Information Catalog Apollo 17. Lunar Receiving Laboratory. MSC 03211 Curator's Catalog. pp. 447.

Heiken G.H. (1974) A catalog of lunar soils. JSC Curator

Heiken G.H. (1975) Petrology of lunar soils. *Rev. Geophys. Space Phys.* **13**, 567-587.

Housley R.M., Cirlin E.H., Paton N.E. and Goldberg I.B. (1974) Solar wind and micrometeorite alteration of the lunar reolith. *Proc. 5<sup>th</sup> Lunar Sci. Conf.* 2623-2642.

LSPET (1973a) Apollo 17 lunar samples : Chemical and petrographic description. *Science* **182**, 659-690.



**Table 1. Chemical composition of 70051**

reference Rhodes74

weight

SiO <sub>2</sub> %	42.05	(a)
TiO <sub>2</sub>	5.04	(a)
Al <sub>2</sub> O <sub>3</sub>	16.15	(a)
FeO	12.81	(a)
MnO	0.19	(a)
MgO	10.25	(a)
CaO	11.87	(a)
Na <sub>2</sub> O	0.43	(a)
K <sub>2</sub> O	0.1	(a)
P <sub>2</sub> O <sub>5</sub>	0.06	(a)
S %	0.08	(a)
sum		

Sc ppm

V

Cr	2258	(a)
Co		
Ni	169	(a)
Cu		
Zn	34	(a)
Ga		

Ge ppb		
As		
Se		
Rb	1.8	(a)
Sr	150	(a)
Y	49	(a)
Zr	169	(a)
Nb	14	(a)

Mo

Ru

Rh

Pd ppb		
Ag ppb		
Cd ppb		
In ppb		
Sn ppb		

Sn ppb		
Sb ppb		
Te ppb		
Cs ppm		

Ba

La

Ce

Pr

Nd

Sm

Eu

Gd

Tb

Dy

Ho

Er

Tm

Yb

Lu

Hf

Ta

W ppb		
Re ppb		
Os ppb		
Ir ppb		
Pt ppb		

Au ppb		
Th ppm		
U ppm		
technique: (a) XRF		

LSPET (1973c) Preliminary examination of lunar samples. Apollo 17 Preliminary Science Report. NASA SP-330, 7-1—7-46.

Mitchell J.K., Carrier W.D., Costes N.C., Houston W.N., Scott R.F. and Hovland H.J. (1973) 8. Soil-Mechanics. In Apollo 17 Preliminary Science Rpt. NASA SP-330. pages 8-1-22.

Morris R.V., Score R., Dardano C. and Heiken G. (1983) Handbook of Lunar Soils. Two Parts. JSC 19069. Curator's Office, Houston

Morris R.V. (1978) The surface exposure (maturity) of lunar soils: Some concepts and Is/FeO compilation. *Proc. 9<sup>th</sup> Lunar Sci. Conf.* 2287-2297.

Papike J.J., Simon S.B. and Laul J.C. (1982) The lunar regolith: Chemistry, Mineralogy and Petrology. *Rev. Geophys. Space Phys.* **20**, 761-826.

Rhodes J.M., Rodgers K.V., Shih C., Bansal B.M., Nyquist L.E., Wiesmann H. and Hubbard N.J. (1974) The relationships between geology and soil chemistry at the Apollo 17 landing site. *Proc. 5<sup>th</sup> Lunar Sci. Conf.* 1097-1117.

Rhodes J.M., Adams J.B., Blanchard D.P., Charette M.P., Rodgers K.V., Jacobs J.W., Brannon J.C. and Haskin L.A. (1975) Chemistry of agglutinate fractions in lunar soils. *Proc. 6<sup>th</sup> Lunar Sci. Conf.* 2291-2308.

Schonfeld E. (1974) The contamination of lunar highland rocks by KREEP: Interpretations by mixing models. *Proc. 5<sup>th</sup> Lunar Sci. Conf.* 1269-1286.

Talwani P., Nur A. and Kovach R.L. (1974) Implications of elastic wave velocities for Apollo 17 rock powders. *Proc. 5<sup>th</sup> Lunar Sci. Conf.* 2919-2926.

Wolfe E.W., Bailey N.G., Lucchitta B.K., Muehlberger W.R., Scott D.H., Sutton R.L and Wilshire H.G. (1981) The geologic investigation of the Taurus-Littrow Valley: Apollo 17 Landing Site. US Geol. Survey Prof. Paper, 1080, pp. 280.